REMARKS

In response to the above-identified Office Action, Applicants amend the application and seek reconsideration thereof. In this response, Applicants amend claims 1, 3, 4, 19, and 26, and add new claim 32. Applicants do not cancel any claims. Accordingly, claims 1-32 are pending.

I. Claims Rejected Under 35 U.S.C. §102(a)

The Patent Office rejects Claims 1-5, 19, 20, 29 and 30 under 35 U.S.C. 102(a) as being anticipated by JP-11-339811 to Junichi, et al. ("Junichi"). Applicants amend independent claims 1, 3, 4 and 19.

To anticipate a claim, the relied upon reference must disclose every limitation of the claim. Among other elements, amended independent claim 1 defines a lithium secondary battery comprising:

> a negative electrode formed by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least one material selected from the group consisting of boron and cobalt.

In making the rejection, the Patent Office characterizes Junichi as showing a lithium secondary battery having a negative electrode including a carbon based material coated on a negative current collector made of a copper alloying having an alloy composition of 95 wt% or more of copper and 0.01-5 wt% of at least one element selected from the group selected from the group consisting of iron, nickel, chromium, phosphorous, tin and zinc. See Paper No. 22, page 3. In addition, the Patent Office characterizes Junichi as showing a copper alloy foil current collector with a thickness of 8-25 μm which "may be produced by a cold rolling process or an electrolytic decomposition process (electroplating) (0010)." Id. Applicants reviewed Junichi and respectfully submit Junichi fails to teach a Cu-based alloy comprising at least one material selected from the group consisting of boron and cobalt as recited by claim 1. Therefore, Junichi fails to teach each of the elements of claim 1.

The failure of Junichi to teach each of the elements of claim 1 is fatal to the anticipation rejection. Therefore, claim 1 is not anticipated by Junichi. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claim 1.

Claim 2 depends from claim 1 and includes each of the elements thereof. Therefore, claim 2 is not anticipated by Junichi at least for the same reasons as claim 1. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 2.

Regarding the rejection of claim 3, among other elements, claim 3 defines a method of making a lithium secondary battery comprising forming a negative electrode by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least one material selected from the group consisting of boron and cobalt similar to claim 1. Therefore, the discussion above regarding Junichi failing to teach a Cu-based alloy comprising at least one material selected from the group consisting of boron and cobalt is equally applicable to claim 3. Thus, Junichi fails to teach each of the elements of claim 3.

The failure of Junichi to teach each of the elements of claim 3 is fatal to the anticipation rejection. Therefore, claim 3 is not anticipated by Junichi. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claim 3.

Regarding the rejection of claim 4, among other elements, claim 4 defines a lithium secondary battery comprising a negative electrode by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least one material selected from the group consisting of boron and cobalt similar to claims 1 and 3. Therefore, the discussion above regarding Junichi failing to teach a Cu-based alloy comprising at least one material selected from the group consisting of boron and cobalt is equally applicable to claim 4. Thus, Junichi fails to teach each of the elements of claim 4.

The failure of Junichi to teach each of the elements of claim 4 is fatal to the anticipation rejection. Therefore, claim 4 is not anticipated by Junichi. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claim 4.

Claims 5 and 29 each depend from claim 4 and include each of the elements thereof. Therefore, claims 5 and 29 are not anticipated by Junichi at least for the same reasons as claim 4. Accordingly, Applicants respectfully withdrawal of the rejection of claims 5 and 29.

Regarding the rejection of claim 19, among other elements, claim 19 defines a method of making a lithium secondary battery comprising forming a negative electrode by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least one material selected from the group consisting of boron and cobalt similar to claims 1, 3 and 4. Therefore, the discussion above regarding Junichi failing to teach a Cu-based alloy comprising at least one material selected from the group consisting of boron and cobalt is equally applicable to claim 19. Thus, Junichi fails to teach each of the elements of claim 19.

The failure of Junichi to teach each of the elements of claim 19 is fatal to the anticipation rejection. Therefore, claim 19 is not anticipated by Junichi. Accordingly, Applicants respectfully request withdrawal of the rejection of independent claim 19.

Claims 20 and 30 each depend from claim 19 and include each of the elements thereof. Therefore, claims 20 and 30 are not anticipated by Junichi at least for the same reasons as claim 19. Accordingly, Applicants respectfully withdrawal of the rejection of claims 20 and 30.

II. Claims Rejected Under 35 U.S.C. §102(b)

The Patent Office rejects claim 26 under 35 U.S.C. 102(b) as being anticipated by JP-06-33569, Hideki ("Hideki"). Applicants amend independent Claim 26.

To anticipate a claim, the relied upon reference must disclose every limitation of the claim. Among other elements, amended claim 26 defines a lithium secondary battery comprising:

> a negative electrode formed by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least one material selected from the group consisting of boron and cobalt.

Applicants respectfully submit Hideki fails to teach at least these elements of claim 26.

In making the rejection, The Patent Office characterizes Hideki as teaching a negative electrode current collector that may comprise copper, nickel, titanium or alloys thereof, and the copper alloy may include zinc, nickel, tin, aluminum, iron, phosphorous, lead, magnesium, titanium, chromium silicon and/or arsenic. See Paper No. 22, page 3. Applicants have reviewed Hideki and respectfully submit Hideki fails to teach a copper-based alloy comprising at least one material selected from the group consisting of boron and cobalt. Therefore, Hideki fails to teach each of the elements of claim 26.

The failure of Hideki to teach each of the elements of claim 26 is fatal to the anticipation rejection. Therefore, claim 26 is not anticipated by Hideki. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 26.

III. Claims Rejected Under 35 U.S.C. §103

The Patent Office rejects claims 1, 2, 4, 5, 7, 15, 29 and 31 under 35 U.S.C. 102(b)/35 U.S.C. 103(a) as being unpatentable over Hideki. Applicants amend claims 1, 4 and 31.

To establish a *prima facie* case of obviousness, the references must teach or suggest each of the elements of the claim. Among other elements, amended independent claim 1 defines a lithium secondary battery comprising:

> a negative electrode formed by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least one material selected from the group consisting of boron and cobalt.

Applicants have discussed above Hideki's failure to teach or suggest at least a copper-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least one material selected from the group consisting of boron and cobalt. Therefore, the discussion above regarding Hideki failing to teach or suggest at least these elements is equally applicable to an obviousness rejection of a claim reciting similar elements. Therefore, Hideki fails to teach or suggest each of the elements of claim 1.

The failure of Hideki to teach or suggest each of the elements of claim 1 is fatal to the obviousness rejection. Therefore, claim 1 is not obvious over Hideki. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 1.

Claim 2 depends from claim 1 and includes each of the elements thereof. Therefore, claim 2 is not obvious over Hideki at least for the same reasons as claim 1. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 2.

Regarding the rejection of claim 4, similar to claim 1, claim 4, among other elements, defines a lithium secondary battery comprising a negative electrode by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least one material selected from the group consisting of boron and cobalt. Therefore, the discussion above regarding Hideki failing to teach or suggest each of the elements of claim 1 is equally applicable to claim 4. Therefore, claim 4 is not obvious over Hideki. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 4.

Claims 5, 7, 15 and 29 depend from claim 4 and include each of the limitations thereof. Therefore, claims 5, 7, 15 and 29 are not obvious over Hideki at least for the same reasons as claim 4. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 5, 7, 15 and 29.

Regarding the rejection of claim 31, claim 31 depends from claim 26. Applicants discussed above in the anticipation rejection of claim 26 that Hideki fails to teach or suggest a lithium secondary battery comprising a negative electrode by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a copper-based alloy with

a thickness of 20 μm or less and the copper-based alloy comprises at least one material selected from the group consisting of boron and cobalt. Therefore, Applicants respectfully submit the discussion above regarding Hideki failing to teach or suggest each of the elements of claim 26 is equally applicable to claim 31 since claim 31 depends from claim 26. Therefore, claim 31 is not obvious over Hideki. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 31.

IV. Claims Rejected Under 35 U.S.C. §103

The Patent Office rejects claims 3, 19, 20, 22 and 30 under 35 U.S.C. 103(a) as being unpatentable over Hideki in view of Junichi. Applicants amend claims 3, and 19.

To establish a *prima facie* case of obviousness, the references must teach or suggest each of the elements of the claim. Among other elements, amended independent claims 3 and 19 define a method for making a lithium secondary battery comprising:

> forming a negative electrode formed by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a Cu-based alloy with a thickness of 20 μm or less and the Cu-based alloy comprises at least one material selected from the group consisting of boron and cobalt.

Applicants have discussed above the failure of Junichi and Hideki to teach or suggest elements similar to elements recited in independent claims 3 and 19. Therefore, claims 3 and 19 are not obvious over the combination of Junichi and Hideki. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 3 and 19.

Claims 20, 22 and 30 each depend from claim 19 and include each of the elements of claim 19. Therefore, claims 20, 22 and 30 are not obvious over the combination of Junichi and Hideki at least for the same reasons as claim 19. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 20, 22 and 30.

V. Claims Rejected Under 35 U.S.C. §103

The Patent Office rejects claim 27 under 35 U.S.C. 103(a) as being unpatentable over Hideki in view of Junichi. Applicants amend claim 26.

To establish a *prima facie* case of obviousness, the references must teach or suggest each of the elements of the claim. Claim 27 depends from claim 26 and includes each of the elements thereof. Among other elements, amended independent claim 26 defines a lithium secondary battery comprising:

> a negative electrode formed by coating carbonaceous materials or SnO_2 on a negative current collector, where the negative current collector is made of a copper-based alloy with a thickness of 20 μm or less and the copper-based alloy comprises at least one material selected from the group consisting of boron and cobalt.

Applicants have discussed above the failure of Hideki to teach or suggest each of the elements of claim 26. Therefore, the discussion above regarding Hideki failing to teach or suggest each of the elements of claim 26 are equally applicable to claim 27 since claim 27 depends from claim 26. Therefore, claim 27 is not obvious over Hideki. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 27.

VI. Allowable Subject Matter

Applicants note with appreciation the Patent Office's indication that claims 6, 8-14, 16-18, 21, 23-25 and 28 would be allowable if rewritten in independent form to include all of the limitations of the base claims and any intervening claims. However, in view of the above discussion, Applicants believe these claims are in condition for allowance without being rewritten in independent form to include all of the limitations of the base claims and any intervening claims.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Patent Office believes that a telephone conference would be useful in moving the application forward to allowance, the Patent Office is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,
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Dated: 1/26, 2004

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CERTIFICATE OF MAILING:

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 26, 2004.

Nadya Gordon 1/26/04

Nadya Gordon *Date*